

SANsurfer FC/CNA HBA Command Line Interface (CLI)

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Table of Contents

1. [Package Contents](#)
2. [Requirements](#)
 - 2.1 [Hardware Requirements](#)
 - 2.2 [Software Requirements](#)
3. [OS Support](#)
4. [Supported Features](#)
5. [Using SANsurfer FC HBA CLI](#)
 - 5.1 [Installing SANsurfer FC HBA CLI](#)
 - 5.2 [Starting SANsurfer FC HBA CLI](#)
 - 5.3 [Removing SANsurfer FC HBA CLI](#)
6. [Additional Notes](#)
 - 6.1 [General \(Applies to All OSs\)](#)
 - 6.2 [Windows](#)
 - 6.3 [Solaris](#)
7. [Known Issues and Workarounds](#)
 - 7.1 [Windows](#)
 - 7.2 [Linux](#)
 - 7.3 [Solaris](#)
 - 7.4 [Mac OS X](#)
 - 7.5 [VMware ESX](#)
 - 7.6 [Others](#)
8. [Contacting Support](#)

1. Package Contents

SANsurfer FC HBA Command Line Interface (CLI) installation packages available for the supported OS platforms include the following.

File Name	Description
scli-1.7.3-bb.windows.exe	All supported Windows platforms
scli-1.7.3-bb.sparc.Solaris.pkg.Z	Solaris SPARC
scli-1.7.3-bb.x86.Solaris.pkg.Z	Solaris x86
scli-1.7.3-bb.macosx.pkg.tgz	Mac OS X (Intel/PowerPC)
scli-1.7.3-bb.i386.rpm.gz	Linux (Intel x86, Intel 64, and AMD64)
scli-1.7.3-bb.IA64.rpm.gz	Linux (Intel IA64)
scli-1.7.3-bb.ppc64.rpm.gz	Linux (PowerPC64)

NOTE: The bb in the preceding file names represent the build number of the current software release.

2. Requirements

This section defines the minimum hardware and software requirements.

2.1 Hardware Requirements

SANsurfer FC HBA CLI requires the following minimum hardware:

- One or more of the following QLogic adapters:
 - QLx2xxx FC host bus adapters
 - QLx8xxx FCoE converged network adapters
- Single-processor or multiprocessor server or workstation:
 - Pentium III with 450 MHz or greater for Windows XP Professional, Windows 2000, Windows Server 2003, Windows Server 2008, Red Hat or SLES Linux, Solaris x86, or NetWare
 - Pentium III with 450 MHz or greater for Windows XP Professional, Windows 2000, Windows Server 2003, Windows Server 2008, Red Hat or SLES Linux, Solaris x86, or NetWare
 - Power Mac G5 1.8 MHz, Intel-based Xserve or Mac Pro or greater with 512 MB memory
- Fibre Channel devices, such as disks and RAID subsystems. SANsurfer FC HBA CLI supports most FC devices. For a complete list of devices that support failover, see the *QLogic SAN Interoperability Guide*, which you can download from the QLogic Web site:
<http://www.qlogic.com/interoperability/interoperability.aspx>

NOTE: Tape devices are shown as part of the configuration, but are not fully supported. (It only provides persistent binding and LUN masking for tape devices.)

- 256 MB physical RAM required to run SANsurfer FC HBA CLI; running with less memory can cause disk swapping, which severely affects performance
- Video card capable of 256 colors and a screen resolution of 800x600 pixels required

- About 7 MB disk space

2.2 Software Requirements

SANsurfer FC HBA CLI requires the following minimum software:

- QLogic QLA2xxx drivers for your OS platform
- Administrative privileges to perform management functions
- One of the operating systems listed in the [OS Support](#) section.

3. OS Support

SANsurfer FC HBA CLI runs on the following OS platforms.

NOTE: For specific service packs (SP) and OS updates, refer to the descriptions where this software version is posted on the QLogic Web site:

http://support.qlogic.com/support/drivers_software.aspx

Windows

Operating Systems		
OS Name	OS Type	Hardware Platform
Windows 2000	32-bit	Intel x86 Intel 64, AMD64
Windows Server 2003	32-bit	Intel x86, Intel 64, AMD64
Windows Server 2003	64-bit	Intel IA64
Windows Server 2003	x64-bit	Intel 64, AMD64
Windows Server 2008	64-bit	Intel IA64
Windows Server 2008	x64-bit	Intel 64, AMD64
Windows XP Professional	32-bit	Intel x86, Intel 64, AMD64
Windows XP Professional	x64-bit	Intel 64, AMD64
Windows Vista	32-bit	Intel x86, x64-bit Intel 64

Solaris

Operating Systems		
OS Name	OS Type	Hardware Platform
OpenSolaris 2008.11 x86	32-bit, 64-bit	Intel x86, Intel 64, AMD64
Solaris 10 x86	32-bit, 64-bit	Intel x86, Intel 64, AMD64
Solaris 8, 9, and 10 SPARC	32-bit, 64-bit	64-bit SPARC

Apple Macintosh

Operating Systems		
OS Name	OS Type	Hardware Platform
Mac OS X (Panther/Tiger/Leopard)	32-bit, 64-bit	PowerPC or Intel

Linux

Operating Systems		
OS Name	OS Type	Hardware Platform
Red Hat RHEL AS 3.0	32-bit, 64-bit	Intel x86 Intel 64, AMD64
Red Hat RHEL AS 4.x	32-bit, 64-bit	Intel IA64, Intel 64, AMD64
Red Hat RHEL AS 5.x	32-bit, 64-bit	Intel IA64, Intel 64, AMD64
Novell SLES 8	32-bit, 64-bit	x86, Intel 64, AMD64
Novell SLES 9	32-bit, 64-bit	IA64, Intel 64, AMD64
Novell SLES 10	32-bit, 64-bit	IA64, Intel 64, AMD64

VMware ESX Server

Operating Systems		
OS Name	OS Type	Hardware Platform
ESX 3.5	32-bit	Intel 64, AMD64

4. Supported Features

SANsurfer FC HBA CLI provides a command line interface (CLI) that lets you easily install, configure, and deploy QLogic Fibre Channel adapters. It also provides robust diagnostic and troubleshooting capabilities and useful statistical information to optimize SAN performance. This tool can only configure adapters on the local machine upon which SANsurfer is installed.

You can operate SANsurfer FC HBA CLI in two modes:

- **Interactive mode** (menu-driven interface). This mode requires user intervention.
- **Non-interactive mode** (command line interface). Use this mode for scripting or when you just want to perform a single operation.

5. Using SANsurfer FC HBA CLI

This section provides information on installing, starting, and removing SANsurfer FC HBA CLI.

5.1 Installing SANsurfer FC HBA CLI

For detailed procedures, refer to the *SANsurfer FC/CNA HBA CLI User's Guide*.

TIP: On Linux, add the verify-options `--nodeps` to skip the dependency check when installing the distribution rpm package on a Novell SLES 8/9/10 IA64 system. For example:

```
#rpm -iv scli-x.xx.xx-xx.IA64.rpm --nodeps
```

5.2 Starting SANsurfer FC HBA CLI

For detailed procedures, refer to the *SANsurfer FC/CNA HBA CLI User's Guide*.

5.3 Removing SANsurfer FC HBA CLI

For detailed procedures, refer to the *SANsurfer FC/CNA HBA CLI User's Guide*.

NOTE: The un-install process might leave behind specific files and directories. You must manually delete these files.

6. Additional Notes

This section provides additional information according to operating system (OS):

6.1 General (Applies to All OSs)

Two different measurement formats are used when displaying the hard drive size: decimal (GB) and binary (GB). Both Linux and Windows show the correct number using their numeric format:

- Windows uses binary (numbers that are a power of 2).
- Linux uses decimal (numbers that are a power of 10).

For example:

2^{10} is 1,024. The closest decimal number is 10^3 or 1,000.

2^{20} is 1,048,576. The closest decimal number is 10^6 or 1,000,000.

2^{30} is 1,073,741,824. The closest decimal number is 10^9 or 1,000,000,000.

6.2 Windows

Under Windows, the `ConfigRequired` parameter in the registry dictates how the OS sees devices.

When `ConfigRequired=0`, both persistently-bound and new devices appear as enabled. This includes devices that might have been previously unconfigured using SANsurfer FC HBA CLI. You can set this parameter in the SANsurfer FC HBA CLI Driver Setting, "Present targets that are persistently bound plus any new target(s) found."

When `ConfigRequired=1`, only persistently-bound devices appear as configured. New devices or devices that were previously unconfigured using SANsurfer FC HBA CLI appear as unconfigured. You can set this parameter in the SANsurfer FC HBA CLI Driver Setting, "Present target(s) that are persistently bound only."

NOTE: For the new Windows driver (version 8.2.0.10 and later), you must set the `ConfigRequired` parameter to 1 to prevent the OS from seeing unconfigured entries.

6.3 Solaris

On Solaris, the `qla_mp_config_required` parameter in the configuration file dictates how the OS sees devices. The `qla_mp_config_required` flag in the QLogic configuration file (`qla2x00.conf`) controls persistent binding of targets. The default configuration file that comes with the QLogic driver does not have an entry for this flag. An entry for this flag appears in the configuration file only after saving the target configuration data with SANsurfer FC HBA CLI.

By default, SANsurfer FC HBA CLI sets the `qla_mp_config_required` flag to 1. When this flag is set to 1, the driver reports only target devices that are persistently bound in the configuration file to the OS. The driver does not report any new or unconfigured targets to the OS. In other words, the default behavior for this flag is "Persistent Targets Only."

When the `qla_mp_config_required` flag is set to 0, the driver reports both persistently bound and new targets to the OS. This is equivalent to "Persistent Plus New."

NOTES:

- SANsurfer FC HBA CLI does not read the value of the `persistent-binding-configuration` parameter from the configuration file.
- The QLC driver does not support persistent binding or failover configuration.

- The QLC driver does not support selective LUN configuration.

7. Known Issues and Workarounds

This section describes the known issues and workarounds (if any) for SANsurfer FC HBA CLI according to operating system.

7.1 Windows

7.1.1 Unsigned Windows Driver Update

Issue: When performing a driver update on unsigned Windows drivers, the OS displays a confirmation dialog box. The dialog box appears in front of SANsurfer (focus).

Workaround: None

7.1.2 Driver Parameters Revert to Their Default Values

Issue: When updating the Windows driver using SANsurfer FC HBA CLI, the driver parameters revert to their default values:

Present targets that are persistently bound plus any new target(s) found

Workaround: Bind by world wide port name (WWPN).

7.1.3 Windows Server 2008 and Vista installation Limits

Issue: SANsurfer FC HBA CLI installation fails on Windows Server 2008 and Vista if you are not logged in as an administrator.

Workaround: Right-click the installation setup file, and from the shortcut menu, click **Run as Administrator**.

7.1.4 HBA Parameters/Templates and Flash Updates on 8Gb Adapters with Windows Server 2008 Inbox Driver Version 9.1.4.5 or 9.1.4.6

Issue: SANsurfer FC HBA CLI does not support adapter parameters and Flash updates on 8Gb adapters if running the Windows server 2008 inbox driver version 9.1.4.5 or 9.1.4.6

Workaround: You must update the host to the latest QLogic driver.

7.1.5 Features Not Available When Running Windows Driver with NPIV Enabled

Issue: When running the driver with NPIV enabled on Windows, the following features are not available with a virtual port:

- HBA parameters settings
- HBA parameters restore default
- Flash update from file
- Flash save to file
- HBA parameters update from file
- HBA parameters save to file
- HBA parameters update from templates
- Target link speed
- Boot device settings
- Driver settings

- HBA beacon
- Target / LUN list

Workaround: None

7.2 Linux

7.2.1 Information Left After Deleting Persistent Configuration

Issue: Deleting the persistent configuration does not remove the options `qla2x00 ConfigRequired=1 ql2xuseextopts=1` string from the `/etc/modules` file.

Workaround: To fully delete all persistent data, you must manually edit this file .

7.2.2 Non-Failover Driver

Issue: Under Linux, when running with a non-failover driver, the `ConfigRequired=1` parameter is ignored. Consequently, if it does not find a persistent binding entry, the driver automatically configures the device. When running with a failover driver, the `ConfigRequired=1` parameter indicates that a device must have the matching `config` entry for it to be configured by the driver.

Workaround: Do one of the following:

- Make sure there is a persistent binding entry.
- Make sure the device has a matching `config` entry.

7.2.3 Features Not Available When Running IOCTL Module Driver

Issue: When running the input/output control (IOCTL) module driver on a Linux OS, the following features are not available:

- Persistent binding
- Selective LUN
- HBA port statistics
- Driver settings
- Host topology

7.2.4 Features Not Available when Running Sysfs Inbox Driver

Issue: When running the Sysfs Inbox driver on a Linux OS, the following features are not available:

- Persistent binding
- Selective LUN
- HBA port statistics
- Driver settings
- Host topology
- Link Status
- Loopback test

Workaround: None

7.2.5 Warning Messages on Startup

Issue: When launching SANsurfer FC HBA CLI, the following warning messages may appear on the console:

```
qla2xxx 0000:01:02.0: Unable to read SFP data (102/a0/0).
qla2xxx 0000:01:02.0: Unable to read SFP data (102/a0/0).
qla2xxx 0000:01:02.1: Unable to read SFP data (102/a0/0).
qla2xxx 0000:01:02.1: Unable to read SFP data (102/a0/0).
qla2xxx 0000:01:02.0: Unable to read SFP data (102/a0/0).
qla2xxx 0000:01:02.1: Unable to read SFP data (102/a0/0).
qla2xxx 0000:01:02.0: Unable to read SFP data (102/a0/0).
```

The driver displays these messages when it is unable to read small form factor pluggable (SFP) data. You can safely ignore them.

Workaround: None

7.2.6 Manually Starting IOCTL Module on Red Hat 4.x Systems

On Red Hat 4.x systems, an input/output control (IOCTL) module is used to communicate between SANsurfer and the driver. If you are using an earlier version of SANsurfer (prior to 1.7.1.b26), you must manually start the IOCTL module. After installing but before starting SANsurfer, execute the following command:

```
# modprobe -a qioctlm
```

7.3 Solaris

7.3.1 Slow Startup in Interactive Mode with Serial Console Server

Issue: On Solaris, when launching SANsurfer FC HBA CLI in interactive mode from a Telnet session using a serial console port login, SANsurfer FC HBA CLI takes a long time to start.

Workaround: To resolve the issue, add the `int` flag to the command used to start the interactive mode. For example:

```
# scli int
```

7.3.2 Stale Semaphore Left Behind

Issue: During normal operation of SANsurfer FC HBA CLI on Solaris, a stale semaphore may be left behind, causing all tools (SANsurfer FC HBA Manager and SANsurfer FC HBA CLI) to fail on load.

Workaround: Manually remove the following two files:

```
/var/tmp/.SEMD
/var/tmp/.SEML
```

7.3.3 FCode/BIOS Update Not Available with Sun-branded 2Gb Adapters

Issue: SANsurfer FC HBA CLI does not support FCode/BIOS update with Sun-branded 2Gb adapters.

Workaround: None

7.4 Mac OS X

7.4.1 Adapter Instance Number Changes at Reboot

Issue: With Mac OS X, the adapter instance number may not be the same as the current number after the next reboot. SANsurfer FC HBA CLI does not accept the adapter number as a valid input and will abort the command.

Workaround: None

TIP: When writing scripts, use the adapter WWPN instead of adapter number.

7.4.2 Unable to Save Configuration

Issue: Under Mac OS X, non-root users with admin privilege cannot save Target Persistent Binding or Selective LUN configuration.

Workaround: Use the `sudo` command. This allows you to run SANsurfer as the superuser or another user. For example:

```
# sudo scli [options]
```

By default, `sudo` requires that users authenticate themselves with a password.

NOTE: By default, this is the user's password, not the root password.

7.5 VMware ESX

7.5.1 Flash Update/Save and NVRAM Issues on 8Gb Adapters

Issue: Flash update/save and NVRAM restore default operations are disabled on 8Gb adapters with the VMware inbox driver.

Workaround: None

7.5.2 Features Not Available When Running VMware Driver

Issue: When running the VMware driver on a VMware OS, the following features are not available with virtual ports:

- HBA parameters settings
- HBA parameters restore default
- Flash update from file
- Flash save to file
- HBA parameters update from file
- HBA parameters save to file
- HBA parameters update from templates
- iiDMA (intelligent interleaved direct memory access) settings
- Boot device settings
- Driver settings
- HBA beacon

Workaround: None

7.6 Others

7.6.1 Port Incorrectly Displayed in Adapter in Topology

Issue: In specific switch zoning configurations, an attached port may appear in the topology as an adapter when it is not actually an adapter.

Workaround: None

8. Contacting Support

Please feel free to contact your QLogic approved reseller or QLogic Technical Support at any phase of integration for assistance. QLogic Technical Support can be reached by the following methods:

Web: <http://support.qlogic.com>

E-mail: support@qlogic.com

[Go to Top](#)



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